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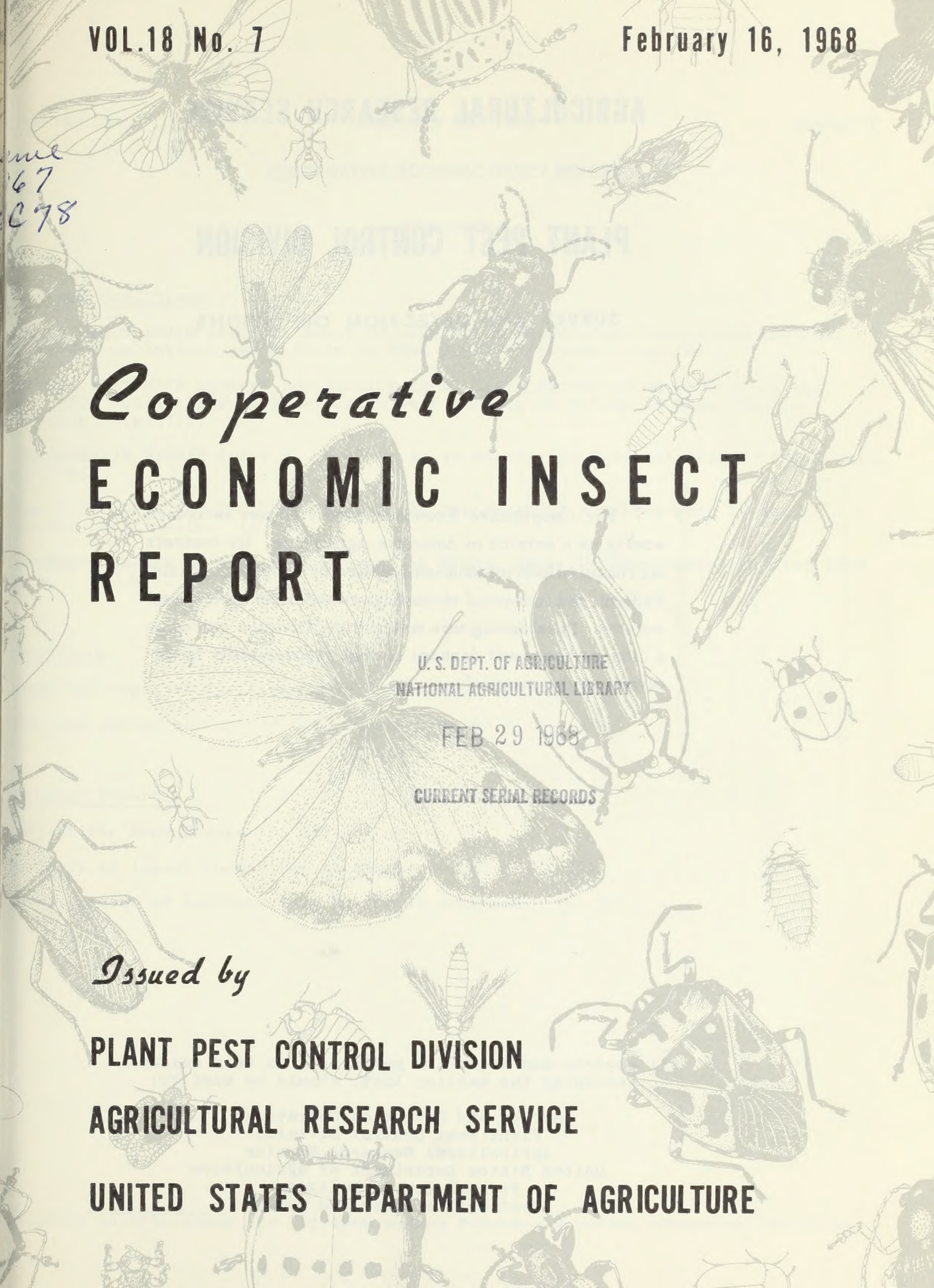

Cooperative ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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United States Department of Agriculture
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Hyattsville, Maryland 20782

Volume 18 February 16, 1968 Number 7

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREEN PEACH APHID colonies heavy on sugarbeets in Maricopa County and controls underway on lettuce and carrots in Yuma County, Arizona. (p. 76).

CITRUS RUST MITE highest for January in 17 years of record on Florida citrus. (p. 76). CITRUS RED MITE situation very serious on citrus in Yuma County, Arizona. (p. 77).

CECIDOMYIID MIDGES heavy on Douglas-fir in Six Rivers National Forest, California. (p. 78).

EAR TICK and A SUCKING LOUSE reponsible for death of numerous deer in Kern County, California. (p. 79).

A GRASS WEBWORM found for first time on Kauai, Hawaii. Previously reported from Oahu. (p. 81).

Detection

FACE FLY reported for first time in Nevada. (p. 79).

For new county and island records see page 80.

Special Reports

Scientific Name Change. (p. 81).

Summary of Insect Conditions in Hawaii - 1967. (p. 82).

Infestations of Lepidopterous Larvae in Arkansas. (p. 86).

Reports in this issue are for week ending February 9 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING FEBRUARY 12

HIGHLIGHTS: Mild weather continued over most of the West as biting cold swept southward over the East. Most of the Nation received only sparce precipitation.

PRECIPITATION: Florida received light spotty showers on Monday, February 5, while light freezing rain or freezing drizzle fell over the northern Great Plains and Great Lakes region and light snow flurries occurred in New England. At midweek, snow fell from the upper Great Lakes to the middle Mississippi River Valley. Sault Sainte Marie, Michigan, received 6 inches of snow on Wednesday. A band of snow 200 miles wide extended from Upper Michigan and northern Lower Michigan to central Alabama and Georgia. On Thursday a storm brought snow flurries to northern and central Florida, with heavier snow northward along the Atlantic coast to New Jersey. Savannah, Georgia, received 3.5 inches of snow on Thursday setting a new alltime record. The storm continued up the coast and snow became general over the weekend in New England. Brisk northwesterly winds swirled snow along the southern and eastern shores of the Great Lakes. Other important precipitation occurred shortly after midweek when rains fell from California to southern Texas. Tonopah, Nevada, received 1.28 inches on Friday and Saturday.

TEMPERATURE: Mild temperatures continued for the fourth consecutive week from the Pacific Ocean to the western Great Plains. North-central Washington, north-central Montana, and portions of the Great Basin averaged 6° to 12° above normal. In sharp contrast, temperatures from Wisconsin to Texas and eastward to the Atlantic coast averaged below normal. The East turned cooler early in the week when strong northerly winds sent a wintry blast from the upper Midwest to the Gulf of Mexico. Freezing temperatures occurred along the gulf coast. Tampa, Florida, registered minimums in the 30's on 4 consecutive days and minimums in the 20's were common in Alabama on 1 or 2 days. Subzero weather occurred from the northern Great Plains to New England and in the northern Appalachians. International Falls, Minnesota, registered 25° below zero on Friday and Saturday mornings. Elkins, West Virginia, recorded 0° on Saturday. As the week ended, frigid air continued to pour into the East, and Houlton, Maine, was registering 18° below zero. (Weather supplied by Environmental Data Service, ESSA.).

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - KANSAS - Light, less than 1 per 10 row feet, in many wheat fields in Grant, Stevens, Seward, and Meade Counties. Larvae feeding at soil surface but little damage evident. (Simpson). OKLAHOMA - Averaged 1 per 5 linear feet in Noble County wheat. (Okla. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Generally light on barley and wheat in Luna and Hidalgo Counties. (Campbell).

GREENBUG (*Schizaphis graminum*) - NEW MEXICO - Ranged 8-20 per linear foot in most barley fields in Roswell, Chaves County, and Carlsbad, Eddy County; 40-60 per linear foot in one field. (Mathews). OKLAHOMA - Counts per linear foot in wheat by county: Tillman and Jefferson 0-55; Atoka, Coal, and Wagoner less than 5; Payne 5; Major 3. Ranged from less than 5 to 20 per linear foot in south-central counties. (Okla. Coop. Sur.). ARKANSAS - Surveys negative in wheat in southeast and northeast areas; light, less than 100 per 100 sweeps, in Pope County. (Boyer). KANSAS - Light, 1-10 per row foot, in most wheat fields in Finney, Kearny, Grant, Stevens, Seward, Meade, Clark, and Comanche Counties. None found in Kingman, Pratt, and Edwards Counties. (Simpson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Ranged 0-40 per 100 sweeps in Yuma County alfalfa and 0-20 in most Maricopa County alfalfa; 150-200 per 100 sweeps in few fields in Litchfield, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Very light on alfalfa around Carlsbad, Eddy County (Mathews), and on alfalfa in Dona Ana, Luna, and Hidalgo Counties (Campbell). ARKANSAS - Survey negative in Conway County. (Boyer).

SMALL GRAINS

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - MISSISSIPPI - Light to moderate on winter wheat in Webster County. (Dinkins). ARKANSAS - Occasional aphid found in wheat in southeast and northeast areas; 50-75 per 100 sweeps in Pope County. (Boyer). OKLAHOMA - Averaged one per linear foot in Noble County wheat. (Okla. Coop. Sur.).

WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Averaged 20 per linear foot in Noble County wheat; light in Payne County wheat. (Okla. Coop. Sur.). KANSAS - Very light in few wheat fields in Pratt, Kiowa, and Comanche Counties. (Simpson).

FORAGE LEGUMES

PEA APHID (*Acyrthosiphon pisum*) - ARIZONA - Ranged 0-610 per 100 sweeps in alfalfa at Yuma County and 10-200 per 100 sweeps in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Very light to light on most alfalfa in State. (N.M. Coop. Rpt.). OKLAHOMA - Ranged 125-150 per square foot in newly seeded alfalfa field in Major County, light in Johnston and Garvin County alfalfa, and 4-5 per square foot in Payne County alfalfa. (Okla. Coop. Sur.). ARKANSAS - Ranged 10-15 per square foot in Conway County alfalfa. (Boyer). MISSISSIPPI - Adults and nymphs light, 10-15 per square foot, on alfalfa in Oktibbeha County. (Dinkins).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Averaged 120 per 100 sweeps in alfalfa field in Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA WEEVILS (Hypera spp.) - CALIFORNIA - H. brunneipennis moderate and active earlier than usual in 80-acre alfalfa field in Holtville, Imperial County; an ichneumon wasp, Bathyplectes curculionis, moderate in same field. (Cal. Coop. Rpt.). ARIZONA - H. brunneipennis ranged 0-20 per 100 sweeps on alfalfa in Yuma County and 10-20 per 100 sweeps in some fields near Williams Air Force Base, Maricopa County; few larvae active in alfalfa terminals. (Ariz. Coop. Sur.). MISSISSIPPI - H. postica larvae light, 1-5 per square foot, in Oktibbeha County alfalfa field. (Dinkins).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - MISSOURI - Swept from red clover June 15, 1967, at Memphis, Scotland County, by R. E. Munson and L. R. Hanning. Det. by W. S. Craig. This is a new county record. (Munson).

LYGUS BUGS (Lygus spp.) - ARIZONA - Ranged 0-60 per 100 sweeps in alfalfa at Yuma County and 30 per 100 sweeps in Maricopa County; nymphs dominant. (Ariz. Coop. Sur.). NEW MEXICO - Light on alfalfa in all alfalfa-growing areas. (N.M. Coop. Rpt.).

THRIPS (Frankliniella spp.) - ARIZONA - Ranged 200-500 in few alfalfa fields in Litchfield and Peoria areas, Maricopa County. (Ariz. Coop. Sur.).

SUGARBEETS

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Colonies heavy in many Maricopa County fields. (Ariz. Coop. Sur.).

COLE CROPS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - ALABAMA - Larvae very heavy and pupae numerous in turnip planting in garden in Geneva County; plants killed. Larvae light and damaging leaves of turnips, mustard, and cabbage in home garden in Lee County; some adults present. (Nall et al.).

GENERAL VEGETABLES

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Controls underway on lettuce and carrots in Yuma, Yuma County. (Ariz. Coop. Sur.).

THRIPS (Frankliniella spp.) - ARIZONA - Present on lettuce in Yuma County; 5 per plant in certain area of Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Light on onions in Mesilla Valley. (Elson).

DECIDUOUS FRUITS AND NUTS

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - FLORIDA - Egg laying by 50 percent of females on peach trees at Gainesville, Alachua County; 15-20 percent of eggs hatched. (Kuitert).

CITRUS

Citrus Insect Situation in Florida - End of January - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 81 percent of groves (norm 59 percent); 66 percent economic (norm 41 percent). Population decreased slightly but is still at the highest January level in 17 years of record. Little change expected. All districts high. TEXAS CITRUS MITE (Eutetranychus banksi) infested 49 percent of groves (norm 27 percent); 14 percent economic (norm 10 percent). Population decreased and is currently in low range although higher than normal for January.

Further decrease expected. Highest districts east and west. SIX-SPOTTED MITE (*Eotetranychus sexmaculatus*) near normal levels at present but expected to increase in February and March. CITRUS RED MITE (*Panonychus citri*) infested 39 percent of groves (norm 33 percent); 8 percent economic (norm 10 percent). Slight increase expected from the present low level normal for January. Highest districts east and west. GLOVER SCALE (*Lepidosaphes gloverii*) infested 76 percent of groves (norm 78 percent); 8 percent economic (norm 17 percent). Populations below January average of recent years and in moderate range. Slight increase expected. Highest districts east and west. PURPLE SCALE (*L. beckii*) infested 65 percent of groves (norm 79 percent); 3 percent economic (norm 9 percent). Population is below the January average and in low range. Decrease expected. Highest district east. BLACK SCALE (*Saissetia oleae*) infested 45 percent of groves (norm 35 percent); 22 percent economic (norm 16 percent). Population is above the low level normal for January and a few scattered groves have moderate to heavy infestations. Little change expected. Highest districts central and east. YELLOW SCALE (*Aonidiella citrina*) infested 64 percent of groves (norm 59 percent); 2 percent economic (norm 15 percent). Slight decrease has occurred and population will remain below average and in low range. Highest districts east and west. CHAFF SCALE (*Parlatoria pergandii*) infested 39 percent of groves (norm 64 percent); 1 percent economic (norm 11 percent). Population is below average of recent years and will continue in low range in all districts. AN ARMORED SCALE (*Unaspis citri*) infested 15 percent of groves; 2 percent moderate to heavy. Increase expected. WHITEFLIES near their normal low levels at present but expected to increase in February and March. (W. A. Simanton (Citrus Expt. Sta. Lake Alfred)).

BLACK CITRUS APHID (*Toxoptera aurantii*) - FLORIDA - Scattered on leaves of 100 of 500 orange nursery plants at Blanton, Pasco County. (Hill).

GREEN SCALE (*Coccus viridis*) - FLORIDA - Adult and nymph damage severe to leaves on 1,500 of 3,000 Meyer lemon trees at Ruskin, Hillsborough County. (Baker).

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - FLORIDA - Infesting stems, leaves, and bark of Meyer lemon plants at nursery in Ruskin, Hillsborough County. (Fla. Coop. Sur.).

CITROPHILUS MEALYBUG (*Pseudococcus fragilis*) - CALIFORNIA - Moderate in a 2-acre citrus planting in Grover City, San Luis Obispo County. (Cal. Coop. Rpt.).

CITRUS RED MITE (*Panonychus citri*) - ARIZONA - Very heavy in treated lemon and grapefruit blocks. Situation very serious as many groves formerly free now infested in Yuma County. Balled citrus trees destined for Phoenix rejected in order to prevent spread into Maricopa County. (Ariz. Coop. Sur.).

YUMA SPIDER MITE (*Eotetranychus yumensis*) - ARIZONA - Light in many groves on Yuma Mesa, Yuma County; lemons preferred host. (Ariz. Coop. Sur.).

ORNAMENTALS

EUONYMUS SCALE (*Unaspis euonymi*) - NEW MEXICO - Heavy on evergreen euonymus in Albuquerque, Bernalillo County. (Heninger). OKLAHOMA - Moderate to heavy on shrubs in Washita and Garfield Counties. (Okla. Coop. Sur.). ALABAMA - Heavy on ornamental euonymus plantings from Lamar County and on numerous plants in Lee County; some plants defoliated in Lee County. (Guthrie et al.).

ARMORED SCALES - FLORIDA - *Chrysomphalus aonidum* nymph damage moderate on leaves of 90 of 100 lily-turf, *Liriope* sp., nursery plants in Tampa February 7 and adult damage moderate on leaves of 500 of 5,000 aleppo pine nursery plants in Seffner, Hillsborough County, January 29 (Simmons); all stages light on leaves of 100 of 1,000 Japanese holly nursery plants at Macclenny, Baker County, February 2 (Collins). *Pinnaspis aspidistrae* adults scattered on 600 of 3,000 lily-turf nursery plants in Seffner, Hillsborough County, January 29. (Simmons). Damage moderate to plants as scales heavy at base of leaves. (Fla. Coop. Sur.).

Fiorinia theae problem in many areas; damaging camellias and holly in Hillsborough, Seminole, and Volusia Counties. (Fla. Coop. Sur.). All stages of *Diaspis boisduvalii* light to severe on leaves on all 200 orchid plants at nursery in Titusville, Brevard County, January 26. (Levan). Plants placed under quarantine. (Fla. Coop. Sur.). MISSOURI - *Aonidiella aurantii* newly hatched crawlers moderate on gardenias in Jasper County. (Munson).

MELON APHID (*Aphis gossypii*) - ARIZONA - Infesting hibiscus plantings in Yuma, Yuma County. (Ariz. Coop. Sur.).

A LACE BUG (*Corythucha incurvata*) - CALIFORNIA - Nymphs and adults heavy on toyon, *Photinia arbutifolia*, shrubs in Escondido, San Diego County. (Cal. Coop. Rpt.).

PRIVET MITE (*Brevipalpus obovatus*) - FLORIDA - Nymphs of probably this species damaging azalea nursery plants in Tampa, Hillsborough County, January 29. (Alfieri). ALABAMA - Probably this species heavy on azalea leaves from home in Choctaw County; numerous plants affected. (Sexton et al.).

FOREST AND SHADE TREES

ARMORED SCALES - CALIFORNIA - *Cryptaspidiotus shastae* light on pine in Victorville San Bernardino County, for a new host record. *Hemiberlesia lataniae* moderate on black locust along highway in Livingston, Merced County. (Cal. Coop. Rpt.). FLORIDA - *Phenacaspis heterophyllae* adults moderate on leaves of 1,250 of 5,000 aleppo pine plants inspected at nursery in Seffner, Hillsborough County, January 29. (Simmons). All stages of *Ischnaspis longirostris* severe on leaves on 300 of 1,000 nursery palms at nursery in Dania, Broward County, February 1. (Shirah). Total of 375 small nursery palms infested and refused certification. (Fla. Coop. Sur.). NEW MEXICO - P. *pinifoliae* light to heavy on pinyon and ponderosa pine in Albuquerque, Bernalillo County; moving into Japanese pine and blue spruce. (Heninger). MARYLAND - *Aspidiotus perniciosus* heavy on white birch plantings in Baltimore. (U. Md., Ent. Dept.).

CECIDOMYID MIDGES (*Contarinia* spp.) - CALIFORNIA - C. *pseudotsugae* and C. *cuniculator* heavy on Douglas-fir in Fox Ridge area, Six Rivers National Forest; common on Douglas-fir in State. (Cook, U.S.F.S.). *Contarinia* sp. larvae heavy in needles of bigcone Douglas-fir on Palomar Mountain, San Diego County. (Cal. Coop. Rpt.).

A EURYTOMID WASP (*Eurytoma tumoris*) - CALIFORNIA - Larvae and pupae of probably this species heavy in Italian stone pine in Woodside, San Mateo County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

COMMON CATTLE GRUB (*Hypoderma lineatum*) - ALABAMA - Light to moderate on cattle in Lowndes County; no emergence observed. Few late larvae emerged from backs of cattle in Bullock County. (Stone et al.). OKLAHOMA - Ranged 0-21 per head (average 7) on untreated cattle and one per 5 head on treated cattle in Payne County. (Okla. Coop. Sur.).

SCREW-WORM (*Cochliomyia hominivorax*) - No cases reported in U.S. February 4-11, 1968. Total of 70 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 10, Sonora 16, Chihuahua 15, Coahuila 1, Nuevo Leon 1, Tamaulipas 27. Total of 15 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operations underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 168,000, Mexico 83,290,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - NEVADA - Single male collected in Mountain City Ranger Station, Elko County, January 10, 1968. Det. by R. C. Bechtel, confirmed by R. S. Gagne. This is a new State Record. (Nev. Coop. Rpt.).

CATTLE LICE - ALABAMA - Heavy on numerous cattle in several herds in Lee and Bibb Counties. (Teague, Odom). MISSISSIPPI - Light on Hereford beef cattle in Yazoo County. (Dinkins). OKLAHOMA - Linognathus vituli moderate on Payne County cattle; 400 per 3-square-inch area on muzzle region of calf in Cherokee County. Bovicola bovis light on cattle in Payne County. (Okla. Coop. Sur.). IOWA - Light on animals in State. (Iowa Ins. Sur.).

HOG LOUSE (Haematopinus suis) - IOWA - Very heavy on one and light on 5 head in check of 26 hogs from 21 farms in central and west-central areas; absent on 20 head. (Iowa Ins. Sur.).

HORSE BITING LOUSE (Bovicola equi) - CALIFORNIA - Heavy on horses on a ranch in Florin, Sacramento County. (Cal. Coop. Rpt.).

EAR TICK (Otobius megnini) - CALIFORNIA - This species and a louse, Linognathus africanus, very heavy on deer on Tejon Ranch in Lebec, Kern County. Most deer in 2 areas affected and over 30 doe dead. Deer deaths caused by exsanguination due to L. africanus covering large areas of the animals. This species averaged over 2,500 per cubic centimeter on one doe with overall total of 2 million adults and an equal number of immature and eggs. Det. by R. Annereaux. Deer unusual host for L. africanus. (Fish and Game).

TICKS - OKLAHOMA - Total of 100 replete females taken from a deer in Cherokee County as follows: 60 percent Ixodes scapularis; 30 percent Dermacentor albipictus; 10 percent Amblyomma americanum. (Okla. Coop. Sur.). CALIFORNIA - D. occidentalis very heavy on cow and calf herd in Carmel Valley, Monterey County. (Loomis).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - FLORIDA - Heavy on hundreds of chickens in University of Florida poultry lab during last 3 weeks; many weakened and some died. (Waites).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - OKLAHOMA - Found in Payne and Oklahoma Counties. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

A BRACONID (Dendrosoter protuberans) - WISCONSIN - Total of 857 specimens of this parasite of Scolytus multistriatus (smaller European elm bark beetle) released at 2 sites in Milwaukee area July 18 and July 25, 1967. Sampling of 28 bolts from 3 infested trees collected August 2 in release area yielded the following: 7,162 Scolytus multistriatus, 522 Spathius canadensis (a braconid), and 445 D. protuberans. A total of 80 additional miscellaneous parasites were recovered, including Entedon leucogramma (a eulophid wasp) and Cheiropachus colon (a pteromalid wasp). (Kennedy, USFS; Conrad).

DAMSEL BUGS (Nabis spp.) - ALABAMA - Adults numerous, 1-2 per yard, on turnips, mustard, cabbage, and other vegetable crops in home gardens in Lee County. (McQueen). ARIZONA - N. ferus averaged 50 per 100 sweeps in Maricopa County alfalfa. (Ariz. Coop. Sur.).

A BIG-EYED BUG (Geocoris punctipes) - ALABAMA - Adults numerous, 3-4 per yard, in turnips, mustard, and other vegetable crops in home gardens in Lee County. (McQueen).

FEDERAL & STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Light on cotton stalks in Chaves and Eddy Counties; survival ranged 50-60 percent. (Mathews). Total of 20 dead in cocoons and 20 live larvae found in 300 row feet in southern Dona Ana County. (Nielsen, Elson). OKLAHOMA - Averaged 8 per inspection during lint cleaner inspections in Caddo, Commanche, McClain, and Stephens Counties; lighter than in December. (Okla. Coop. Sur.).

TULIPTREE SCALE (Toumeyella liriodendri) - CALIFORNIA - Treatment in San Jose, Santa Clara County, begun January 16 as 120 parkway trees and 6 yard hosts in Willow Glen area completed. Total of 1,005 parkway trees and 143 yard hosts inspected. Survey results negative except for one yard tree. (Cal. Coop. Rpt.).

LIGHT TRAP COLLECTIONS

FLORIDA - Sanford - 1/30-2/3, BL - Black cutworm (Agrotis ipsilon) 47, cabbage looper (Trichoplusia ni) 24, granulate cutworm (Feltia subterranea) 160, yellow-striped armyworm (Prodenia ornithogalli) 33. TEXAS - Brownsville - 2/1-9, 2 BL, 39-74°F, no precip. - Armyworm (Pseudaletia unipuncta) 78, black cutworm 228, cabbage looper 6, granulate cutworm 51, salt-marsh caterpillar (Estigmene acrea) 74, variegated cutworm (Peridroma saucia) 75, yellow-striped armyworm 118.

INSECT DETECTION

New State Record

FACE FLY (Musca autumnalis) - NEVADA - Single male collected in Mountain City Ranger Station, Elko County, January 10, 1968. Det. by R. C. Bechtel, confirmed by R. S. Gagne. (p. 79).

New County and Island Records

CLOVER SEED WEEVIL (Miccotrogus picirostris) - MISSOURI - Scotland County. (p. 76).

A GRASS WEBWORM (Herpetogramma licarsisalis) - HAWAII - Kauai. (p. 81).

CORRECTIONS

CEIR 18(4):42 - Status of the European Corn Borer in 1967 - Line 10 in "Abundance" paragraph should read: Populations in Minnesota increased over 1966 in the northwest district...Line 12 should read:...were below 100 borers per 100 plants in 66 of the 72 districts surveyed.....

CEIR 18(5):56 - Maunaloa Bean Beetle (Araeocorynus cumingi) - HAWAII - Last line should read "Previously found only on Oahu and Hawaii Island." (Funasaki).

HAWAII INSECT REPORT

Turf, Pasture - Larvae and adults of a GRASS WEBWORM (*Herpetogramma licarsisalis*) found on Kauai for a new island record. Larvae infesting tifdwarf grass at Wailua Houselots. (Ikehara, Sugawa). A BILLBUG (*Sphenophorus venatus vestitus*) very light on Kikuyu grass in Paauilo, Hawaii Island, compared with moderate to heavy infestations in early December. Larvae and adults continue very light in Kikuyu grass pastures on Maui and at Kahua Ranch in South Kohala district, Hawaii Island.(Miyahira, Yoshioka).

Forage Legumes - PEA APHID (*Acyrthosiphon pisum*) adults very light, less than 0.01 per trifoliate leaf, in 25-acre alfalfa field at Kaunakakai, Molokai. THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) adults moderate, 5-10 per sweep, in same field. (Miyahira).

Vegetables - All stages of a SLUG (*Limax* sp.) heavy and damage light in cabbage field at Kaaawa, Oahu. (Sato). LEAF MINER FLIES (*Liriomyza* spp.) moderate to heavy on watermelons at Makaha; light to moderate on green onions and light on tomatoes and beans at Waianae and Waimanalo, Oahu. (Funasaki, Higa).

Fruits - BLACK CITRUS APHID (*Toxoptera aurantii*) heavy on terminal leaves of backyard grapefruit trees in Kaneohe, Oahu, and pomelo trees at Puako, Hawaii Island. (Funasaki, Chong).

Ornamentals - PACIFIC BEETLE COCKROACH (*Diploptera punctata*) caused 40 percent branch damage to 50 feet of cypress hedge at Honokaa, Hawaii Island. (Davis).

Forest and Shade Trees - Larvae of a PYRALID MOTH (*Uresiphita polygonalis*) moderate and defoliating sophora at Kawaihae-uka, Hawaii Island. (Davis).

General Pests - SOUTHERN GREEN STINK BUG (*Nezara viridula*) nymphs increased lightly on wild spiderherb, *Gynandropsis gynandra*, especially in warm, lowland areas throughout Maui. (Miyahira).

Man and Animals - Total of 497 *Aedes vexans nocturnus* and 11,525 *Culex pipiens quinquefasciatus* taken in 49 light traps on Oahu during January. *A. vexans nocturnus* light in all areas and *C. pipiens quinquefasciatus* heavy throughout windward, leeward, and north shore areas. (Mos. Cont. Br., Dept. of Health).

Miscellaneous - Larvae of a NOCTUID MOTH (*Achaea janata*) moderate to heavy on many castorbean plants and adults common on various weeds at Waipahu, Ewa, and Waianae, Oahu; adults numerous in residential area on Pacific Heights in Honolulu. (Funasaki, Holt).

CHANGE IN SCIENTIFIC NAME

Diatraea Guilding, Recent Synonymy

Bleszyński (Acta Zoologica Cracoviensia, 12:100, 1967) lists *Zeadiatraea* Box as a synonym of *Diatraea* Guilding. This action results in a change of the scientific names of the southwestern corn borer from *Zeadiatraea grandiosella* (Dyar) to *Diatraea grandiosella* Dyar and the neotropical corn borer from *Zeadiatraea lineolata* (Walker) to *Diatraea lineolata* (Walker).

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SUMMARY OF INSECT CONDITIONS IN HAWAII - 1967

Highlights

There were 11 species reported for the first time in the State during 1967, while others that were already established spread to other islands. Some important new pests to the State include: A GRASS WEBWORM (Herpetogramma licarsisalis) is widespread and causing light to severe damage to lawns, parks, golf courses, and pastures on Oahu; a STRATIOMYID FLY (Gobertina picticornis) on Oahu and previously reported only from Africa; a SPIDER MITE (Oligonychus stickneyi) moderate on Bermuda grass in October on Oahu.

Sugarcane

NEW GUINEA SUGARCANE WEEVIL (Rhabdoscelus obscurus) caused much damage in some areas of Kauai and Hawaii Islands during the spring and summer. An ANT (Strumigenys rogeri) was collected in November 1966 in the upper Manoa Valley, Oahu, in a dead, bored sugarcane stalk. Det. by D. R. Smith. It was reported for first time in State in 1967.

Turf, Pastures

A GRASS WEBWORM (Herpetogramma licarsisalis) was heavy in pasture grass at Kaaawa and in lawns at Hickam Air Force Base, Oahu, in late August and early September. This was a new State record. It is now widespread throughout Oahu and causing light to severe damage to lawns, parks, golf courses, and pastures. ARMYWORM (Pseudaletia unipuncta) was found in trace numbers in 1967 on all islands. This was the fourth consecutive year in which populations did not increase to significant levels. Parasites and pathogens apparently prevented outbreaks. Previously, large numbers infested Kikuyu grass, especially in the Kohala district on Hawaii Island during the spring. BERMUDAGRASS MITE (Aceria neocynodonis) was light to heavy on Maui and Hawaii Islands in September for new island records. A TARSONEMID MITE (Steneotarsonemus sp.) was moderate on Bermuda grass in Manoa Valley, Oahu, in April. Det. by F. H. Haramoto. A SPIDER MITE (Oligonychus stickneyi) was moderate on Bermuda grass in October at Hickam Air Force Base Oahu, for a new State record. A BILLBUG (Sphenophorus venatus vestitus) caused scattered moderate to heavy damage in Kikuyu grass pastures in the Kaupakulua and Haiku areas on Maui in June and at Paauilo, Hawaii Island, during the fall. Scattered light to moderate populations were dominant throughout 1967 on Kikuyu grass pastures in the Kohala District, Hawaii Island, where a light widespread infestation covered about 18,000 acres in late 1966. It also infested Bermuda grass lawns and golf courses in various areas on all the major islands.

General Vegetables

BEET ARMYWORM (Spodoptera exigua) damage ranged light to moderate in most green onion fields and was moderate on young corn at Kahuku in May and at Waianae in October in Oahu. TARO LEAFHOPPER (Tarophagus proserpina) was very light on Oahu, Kauai, Hawaii, and Maui. It built up slightly in late summer and early fall. CARMINE SPIDER MITE (Tetranychus telarius) and GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) caused serious problems on beans, tomatoes, eggplants, and cucumbers in all lowland areas of the State especially during the spring and summer. T. telarius was very troublesome on celery at 2,700 feet elevation at Waimea, Hawaii Island, during the summer. Intensive chemical control measures were necessary. RED-SHOULDERED STINK BUG (Thyanta accerra) was insignificant and confined to swollen fingergrass from Sand Island to Makaha along the coast of Oahu. Three specimens of a CHLOROPID FLY (Neoloxotaenia gracilis) were caught in light traps at Honolulu, Oahu, in September 1964, December 1966, and November 1967. Det. by C. W. Sabrosky. This new State record was reported in the CEIR in 1968. POTATO TUBERWORM (*Phthorimaea operculella*) was heavy on eggplants at Waimanalo, Oahu, in August and potatoes at Hoolehua, Molokai, during the fall. MELON FLY (*Dacus cucurbitae*) caused moderate to heavy damage on cucurbits and tomatoes on Oahu, Maui, and Hawaii Islands during the summer and fall. Populations were generally light on Kauai. IMPORTED CABBAGEWORM (*Pieris rapae*) was light to moderate on cabbage and other cole crops throughout the State. Spotted, heavy populations caused economic damage in some fields during the winter in the Kula area, Maui. DIAMONDBACK MOTH (*Plutella xylostella*) was moderate on cole crops from March to September and damage was moderate to heavy during the summer on Kauai, Maui, and Oahu.

CORN EARWORM (*Heliothis zea*) was heavy on Oahu in July and August and required intensive controls. Buildups were light in small plantings in scattered areas on the other islands during the summer. CABBAGE WEBWORM (*Hellula rogatalis*) was heavy and damage severe to Chinese cabbage on Kauai in March and to daikon seedlings on Oahu in August and November. Populations were generally light on the other islands. LEAF MINER FLIES (*Liriomyza* spp.) remained serious on various truck crops in the lowland areas of Oahu, Maui, and Kauai from April to November. Damage was heavy to the foliage of beans, cucumbers, melons, green onions, and tomatoes. These pests killed 90-100 percent of the watermelon seedlings in a large field on Oahu in May and made 40-75 percent of the green onions from some fields unmarketable during the summer and early fall. Repeated controls were necessary. GREEN PEACH APHID (*Myzus persicae*) was moderate to heavy and difficult to control during the summer and early fall in eggplant-growing areas of Oahu; numbers appeared heaviest in September. BEAN POD BORER (*Maruca testulalis*) was generally light on all major islands with damage moderate to unsprayed, backyard lima beans in some areas of Oahu, Maui, and Lanai. GIANT AFRICAN SNAIL (*Achatina fulica*) was very active after fall and winter rains on Oahu and Maui although crop damage was not significant during 1967. Eradication measures were continued in localized infestations on Kauai and Hawaii Islands. PEPPER WEEVIL (*Anthonomus eugenii*) was light to moderate on bell peppers, especially during the spring and fall months, on Oahu.

Fruits and Nuts

CLOUDY-WINGED WHITEFLY (*Dialeurodes citrifolii*) was heavy on citrus at Hilo, Hawaii Island. The COCONUT LEAF ROLLER (*Hedylepta blackburni*) outbreak, apparently the heaviest since 1945, caused 50-100 percent defoliation of most trees on Kauai in January and February. Damage ranged moderate to heavy to some trees on Maui in March and April, although no damage occurred on the other islands. BROAD MITE (*Hemitarsonemus latus*) damaged macadamia flowers in an orchard at Hilo, Hawaii, during a heavy outbreak in March. BARNACLE SCALE (*Ceroplastes cirripediformis*) was very heavy on passion-fruit at Kahului, Maui, from January to July but was moderate to light from August to December. A MEALYBUG (*Pseudococcus obscurus*) was generally light on passion-fruit throughout 1967 at Kahului, Maui. Numbers were moderate to heavy in a few areas in May but decreased by late June. MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) damaged nearly all of the experimental peaches on Maui. Damage was light to medium on plums on Hawaii Island in July. Light numbers prevailed on commercial fruits throughout the major islands. ORIENTAL FRUIT FLY (*Dacus dorsalis*) continued to be the dominant fruit fly species in the State. Numbers ranged light to heavy on commercial citrus, guavas, and papayas; and on backyard avocados, mangoes, litchi, and other fruits. Heavy outbreaks of RED-BANDED THRIPS (*Selenothrips rubrocinctus*) occurred on guava fruits on Kauai in January, on Oahu in June, and on Hawaii in October.

Ornamentals

HAWAIIAN THRIPS (*Thrips hawaiiensis*) was light to moderate on gardenia blossoms during the spring. Several heavy infestations occurred in other areas. Damage was severe to cattleya and dendrobium orchids at Manoa, Oahu, during October. THREE-LINED POTATO BEETLE (*Lema trilineata*) larvae and adults were moderate on cup-of-gold and *Datura* sp. during the summer on Kauai, Maui, and Oahu. A FALSE SPIDER MITE (*Brevipalpus phoenicis*) was heavy and caused severe defoliation and much dieback to *Ligularia* sp. in the Lihue area, Kauai, during March. An ARMORED SCALE (*Phenacaspis cockerelli*) continued moderate to heavy on oleander throughout 1967 in scattered areas of Oahu, Maui, Kauai, and Hawaii Islands.

Forest and Shade Trees

A PSYLLID (*Psylla uncatoides*) was light to moderate on acacia trees at Honolulu, Kaneohe, and Kawailoa on Oahu in March and May. This species was reported for the first time on Maui and Kauai in June. Light numbers of CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) occurred on *Ficus retusa* throughout the State but were controlled by biological agents. MONKEYPOD MOTH (*Polydesma umbricola*) outbreaks were heavy in some areas on Oahu and Maui during the spring. Defoliation ranged 50-90 percent on many trees at Lahaina, Maui, in early June. A CONIFER APHID (*Cinara carolina*) was light to moderate on pines on Kauai in June for a new island record. BLACK THREAD SCALE (*Ischnaspis longirostris*) was moderate on *Ficus retusa* at Lihue, Kauai, for a new island record. This species was previously recorded from Oahu, Maui, Hawaii, Molokai, and Niihau Islands. A STRATIOMYID FLY (*Gobertina picticornis*) was collected on Oahu in October 1966 for a new State record. This species had previously been reported only from Africa.

General Pests

SOUTHERN GREEN STINK BUG (*Nezara viridula*) increased slightly in some areas on all the major islands from January to May and from October to December. Damage was light on beans, corn, tomatoes, soybeans, and macadamia. SPOTTED GARDEN SLUG (*Limax maximus*) was heavy and caused moderate to heavy damage to strawberries, green onions, chrysanthemums, and cabbage on Maui during the spring and summer. CHINESE ROSE BEETLE (*Adoretus sinicus*) adults caused heavy damage to foliage of crops, forest and shade trees, ornamentals, and fruit trees in scattered areas, especially on Maui, Kauai, and Oahu. This species was a major pest in 1967. A BARK BEETLE (*Xylosandrus compactus*) was light to heavy in over 40 species of plants at Hilo, Hawaii Island. Most of the plants were new host records for the State. Numbers were light to moderate on commercially grown epicattleya and dendrobium orchids at Hilo in March. A PLATASPID BUG (*Coptosoma xanthogramma*) was light to heavy on shade trees, ornamentals, and various weeds on Oahu. Numbers were light to moderate on beans in the windward area but no damage was reported. This species was found for the first time on Hawaii in April, on Maui in September, and on Kauai in October. An ANT (*Solenopsis (Diplorhoptrum)* sp.) was collected in upper Manoa Valley, Oahu, in September and November 1966. This was the first report of the subgenus *Diplorhoptrum* in the State. Another ANT (*Pheidole javana*), collected in Manoa Valley, Oahu, in November 1966 and at Hilo, Hawaii Island, in December 1966, was also a new State record.

Man and Animals

A HALICTID BEE (*Halictus* sp.) continued very annoying to residents, picnickers, and hotel guests in the Kawaihae Bay area, Hawaii Island, during the fall and winter. Migrating populations of a MILLIPED (*Trigoniulus lumbricinus*) annoyed residents and hotel guests at Kailua-Kona, Hawaii Island, during late November and early December. Large numbers of LONG-LEGGED ANT (*Anoplolepis longipes*) entered apartments in the Punchbowl area of Honolulu, Oahu, during September and homes in the Hilo and Kapoho areas, Hawaii Island, during late October. FIRE ANT (*Solenopsis geminata*) was established for the first time on Maui in February when colonies were found near coastal regions and in pastures from Maalaea Bay to Ulupalakua. This species was previously found only on Oahu, Hawaii, and Molokai Islands. SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) averaged 148 per trap per month on Oahu. The highest monthly average of 266 was recorded in September. Collections were higher in the Nanakuli and Waianae areas early in 1967, in the windward areas during the spring, and in the north shore area during the summer and fall. A MOSQUITO (*Aedes vexans nocturnus*) averaged 23 per light trap per month on Oahu with the highest monthly average of 54 reported in July. Collections were higher in the windward areas than in the other areas during the spring and summer. LARGE DUCK LOUSE (*Trinoton querquedulae*) was collected from the native Kokoa duck and the immigrant pin-tail duck at Lihue, Kauai, in January for a new State record.

Beneficial Organisms

The first recovery of a SCIOMYZID FLY (*Sepedon sauteri*), a predator of the liver-fluke snail, was made in August at Waianae, Oahu. The original release of 100 adults was made in March. A GALL MIDGE (*Zeuxidiplosis giardi*) and a KLAMATH-WEED BEETLE (*Chrysolina quadrigemina*) increased their established areas on Hawaii Island. Adults were heavy on Klamath-weed between the 6,700 feet and 8,250 feet elevations on Mt. Hualalai during the November survey. Adults of a TACHINA FLY (*Trichopoda pennipes*) were very common around farm areas on all islands. Eggs were common on southern green stink bug (*Nezara viridula*). Another TACHINA FLY (*Lespesia archippivora*) parasitized most of the monarch butterfly (*Danaus plexippus*) chrysalides collected from Manoa, Oahu, in March and 40 percent of the imported cabbageworm (*Pieris rapae*) taken from Pulehu, Maui, in December. MELASTOMA BORER (*Selca brunella*) numbers and damage were heavy on Indian rhododendron, a rangeland weed, especially during the late spring and summer on Kauai. Damage was light to moderate throughout 1967 on Hawaii Island. A PTEROMALID WASP (*Anysis alcocki*) was recovered for the first time in the State on Oahu in February. This species was introduced from the Philippines to control wax scales. A TORTRICID MOTH (*Apotoforma* sp.) was moderate to heavy and caused heavy damage to blackberry on Kauai and Maui. Activity was noticeable at release sites on Hawaii Island in October. A CRYPTOCHAETID FLY (*Cryptochetum iceryae*) was moderate in a *Desmodium* sp. field infested with cottony-cushion scale (*Icerya purchasi*) on Oahu in April. This parasitic fly was recorded for the first time in the State in July 1966.

A PUNCTURE-VINE STEM WEEVIL (*Microlarinus lypriformis*) heavily damaged puncture-vines on Oahu, Maui, and Molokai. A survey on Molokai in October revealed no evidence of puncture-vine where it was formerly very active. DUNG BEETLES (*Onthophagus catta* and *Copris incertus prociduus*) were moderate to heavy in pastures in the Kau District on Hawaii Island during the winter. *O. catta* was heavy at Pupukea, Oahu, in September and at Makena, Maui, in November. Adults of an OTITID FLY (*Euxesta wettsteini*) were collected on Oahu, Molokai, and Lanai for a new State record. It apparently is a scavenger that breeds in decaying plant material.

Miscellaneous Insects

Nymphs and adults of a GRASSHOPPER (*Trimerotropis pallidipennis*) were numerous in a localized weedy area at Ewa, Oahu, in July. Trace to very light numbers remained in the area during the remainder of 1967. VAGRANT GRASSHOPPER (*Schistocerca vaga*) continued to increase on weeds throughout the western section of Oahu. Several adults were found in the northern, central, and eastern sections of the island during the summer. Seven of the 12 adults taken on Kauai since the first discovery in July 1966 were caught this year. An ASTEIID FLY (*Asteia* sp.) adult caught in a light trap at Honolulu, Oahu, July 19, 1966, was reported as a new State record in 1967. Det. by C. W. Sabrosky.

Infestations of Lepidopterous Larvae in Arkansas in 1967 1/

By W. P. Boyer, Survey Entomologist
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Infestations of some species of lepidopterous larvae were much heavier in 1967 than previously known. Most significant were the fall armyworm (Spodoptera frugiperda) and cabbage looper (Trichoplusia ni). Of lesser importance were garden webworm (Loxostege similalis), beet armyworm (Spodoptera exigua) and yellow-striped armyworm (Prodenia ornithogalli).

Fall armyworm appeared much earlier, was higher in numbers, and was more widespread than it had ever been known to be in Arkansas. A wide variety of host plants was attacked. This pest normally appears in small numbers in midsummer in the State, but in some years high numbers have appeared late in the summer. In 1967 the situation was quite different. Larvae were rather numerous in the whorls of corn as far north as Fayetteville by mid-June. Fall armyworm reached extremely high numbers in July in the more southern areas of the State. This outbreak peaked about July 18. Crops infested were soybeans, alfalfa, corn, sorghum, pastures, meadows, and in a few cases, rice. Lawns were heavily infested in many areas where as high as 150 larvae per square foot were observed in some cases. Egg masses, found on buildings and laundry on outside clothes lines, and numerous larvae caused widespread concern.

The second period of heavy infestation occurred in August and peaked about August 15. Populations were heaviest in central and northeast Arkansas on the same host plants as in July. It was feared that the pest might become a serious problem in fall-sown small grain. Although a few infestations occurred in small grain September 21-28 in the west and northeast areas, they were no heavier than normal.

Cabbage looper is generally present in cotton in Arkansas but was more numerous than usual in 1967. It caused the greatest concern in greens crops, mainly in east Arkansas, in early October when numbers were extremely high and was present in large numbers on the same crops in west Arkansas. In Cross County, east-central Arkansas, several counts of loopers were taken October 10 on turnip greens. In 21 counts, the number of larvae per 5 feet of row ranged from 12 to 48 with an average of 21.7.

Beet armyworm, although not a new pest in the State, is seldom found and has occurred only in light numbers. This year larvae were collected at the rate of 50-75 per 100 sweeps in alfalfa in the southwest section on September 6.

Other lepidopterous larvae common to the State failed to be more numerous than normal. Bollworm (Heliothis zea) was less numerous than in some years; green cloverworm (Plathypena scabra) populations were not high; and armyworm (Pseudaletia unipuncta) was lighter than normal.

No attempt is made to fully explain the reasons for the abundance of the species that were heavier than normal in Arkansas in 1967; however, weather conditions were abnormal and may have been an important contributing factor. According to Luginbill (1928), the fall armyworm overwinters in the tropics and along the gulf coast. In most years it does not appear in north Arkansas until mid- or late summer. The species evidently had an unusually early start in its annual migration northward as larvae were found in mid-June in the extreme northwest area of the State.

1/ Published with the approval of the Director, Arkansas Agricultural Experiment Station.

A study of the United States weather records showed that March and April temperatures were above normal along the gulf coast and northward including Arkansas. Temperature departures from the 30-year average for several locations in Texas, Louisiana and Arkansas are listed in Table 1. March temperatures were 4.2° F. above normal in both east Texas and Louisiana and 5.7° F. above normal in Arkansas. April temperatures were 6.4° F., 5.3° F. and 4.3° F. above normal respectively in east Texas, Louisiana and Arkansas. Those above-normal temperatures may have had an important effect on the fall armyworm's early start in the spring of 1967.

Luginbill further stated that cool weather and high relative humidity were favorable to the fall armyworm. Temperatures were slightly below normal in Arkansas in May and June. July, August and September temperatures ranged from 4.1° F. to 4.9° F. below normal. Sufficiently high relative humidity in the State also favored the species. In the lower elevations where populations were heaviest, weather records showed that relative humidity was above 90 percent for 8- to 12-hour periods at night and 50 percent or above during the day for most of the summer months.

It is apparent that abnormal temperatures, as existed in 1967, favored the fall armyworm but not other species observed. Weather factors will be studied in the future to help predict probable outbreaks of species that overwinter south of Arkansas and migrate into the State.

Literature Cited

Luginbill, Phillip. 1928. The fall armyworm. U.S. Dept. Agr. Tech. Bul. 34, 92 pp.

Table 1. Temperature Departures in Degrees F. From 30-Year Average, 1967.

	Texas				Louisiana					
	Brownsville	Corpus Christi	Houston	Average	New Orleans	Baton Rouge	Lake Charles	Alexan-dria	Shreve-port	Average
March	+2.2	+4.0	+6.3	+4.2	+1.8	+4.0	+4.8	+3.5	+6.9	+4.2
April	+6.3	+5.6	+7.2	+6.4	+4.3	+4.8	+6.8	+5.1	+5.7	+5.3

	Arkansas						
	Portland	Eldorado	Hope	Little Rock	Marianna	Blytheville	Average
March	+4.5	+5.1	+5.5	+7.1	+5.3	+7.0	+5.7
April	+4.5	+3.4	+3.2	+4.3	+5.3	+5.0	+4.3
May	-0.9	-3.7	-3.3	-1.9	-4.2	-1.5	-2.6
June	-1.4	-1.4	-1.1	-0.6	-0.4	+0.2	-0.8
July	-4.1	-4.2	-5.0	-4.0	-3.9	-3.5	-4.1
August	-4.0	-4.6	-5.7	-5.8	-4.8	-4.2	-4.9
September	-4.3	-5.3	-5.8	-5.3	-4.2	-3.1	-4.7

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